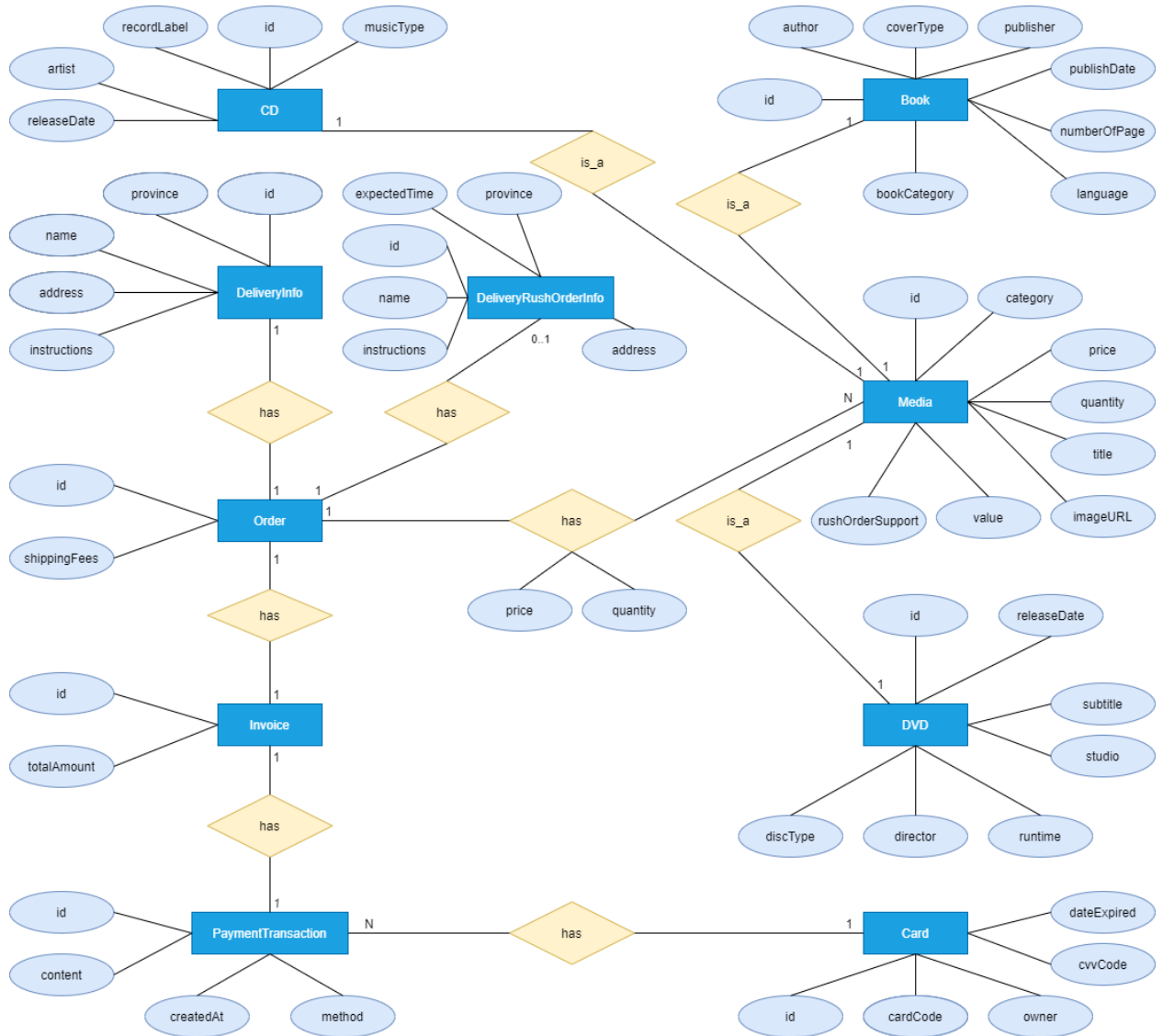1. Conceptual Data Model

2. Database Design
2.1 Logical Data Model
2.2 Physical Data Model

- Media

#	PK	FK	Column Name	Data type	Mandatory	Description
1	x		id	Integer	Yes	ID, auto increment
2			category	VARCHAR(45)	Yes	Media type, e.g CD, DVD, Book

#	PK	FK	Column Name	Data type	Mandatory	Description
3			price	Integer	Yes	Current price
4			quantity	Integer	Yes	Number of products
5			title	VARCHAR(45)	Yes	Product name
6			value	Integer	Yes	Value of the product
7			imageUrl	VARCHAR(45)	Yes	Product image path
8			rushOrderSupport	Boolean	Yes	The product is supported to place rush order or not. YES or NO

- CD

#	PK	FK	Column Name	Data type	Mandatory	Description
1	x	x	id	Integer	Yes	ID, same as ID of Media of which type is CD
2			artist	VARCHAR(45)	Yes	Artist's name
3			recordLabel	VARCHAR(45)	Yes	Record label
4			musicType	VARCHAR(45)	Yes	Music genres
5			releasedDate	DATETIME	No	Release date

- DVD

#	PK	FK	Column Name	Data type	Mandatory	Description
1	x	x	id	Integer	Yes	ID, same as ID of Media of which type is DVD
2			discType	VARCHAR(45)	Yes	Disc type
3			director	VARCHAR(45)	Yes	Director
4			runtime	Integer	Yes	Duration
5			studio	VARCHAR(45)	Yes	Manufacturer
6			subtitle	VARCHAR(45)	Yes	Subtitles

| 7 | | | releasedDate | DATETIME | Yes | Release date |
| 8 | | | filmType | VARCHAR(45) | Yes | Genres |

- Book

#	PK	FK	Column Name	Data type	Mandatory	Description
1	x	x	id	Integer	Yes	ID, sam as ID of Media of which type is Book
2			author	VARCHAR(45)	Yes	Author
3			coverType	VARCHAR(45)	Yes	Cover type
4			publisher	VARCHAR(45)	Yes	Publishing house
5			publishDate	DATETIME	Yes	Date of publishing
6			numOfPages	Integer	Yes	Page number
7			language	VARCHAR(45)	Yes	Language
8			bookCategory	VARCHAR(45)	Yes	Book category

- Card

#	PK	FK	Column Name	Data type	Mandatory	Description
1	x		id	Integer	Yes	ID, auto increment
2			cardCode	VARCHAR(45)	Yes	Card code
3			owner	VARCHAR(45)	Yes	Cardholder
4			cvvCode	VARCHAR(3)	Yes	CVV code
5			dateExpired	VARCHAR(4)	Yes	Expiration date

- DeliveryInfo

#	PK	FK	Column Name	Data type	Mandatory	Description
1	x		id	Integer	Yes	ID, auto increment
2			name	VARCHAR(45)	Yes	Receiver name
3			province	VARCHAR(45)	Yes	Provinces
4			instructions	VARCHAR(200)	No	Delivery instructions

5			address	VARCHAR(100)	Yes	Delivery address

- DeliveryRushOrderInfo

#	PK	FK	Column Name	Data type	Mandatory	Description
1	x		id	Integer	Yes	ID, auto increment
2			name	VARCHAR(45)	Yes	Receiver name
3			province	VARCHAR(45)	Yes	Provinces
4			instructions	VARCHAR(200)	No	Delivery instructions
5			address	VARCHAR(100)	Yes	Delivery address
6			expectedTime	VARCHAR(5)	Yes	Time is expected to delivery rush order

- Order

#	PK	FK	Column Name	Data type	Mandatory	Description
1	x		id	Integer	Yes	ID
2			shippingFees	VARCHAR(45)	Yes	Shipping fee
3		x	deliveryInfoId	Integer	yes	Delivery Info ID

- OrderMedia

#	PK	FK	Column Name	Data type	Mandatory	Description
1	x	x	mediaId	Integer	Yes	Media ID
2	x	x	orderId	Integer	Yes	Order ID
3			price	Integer	Yes	Selling price
4			quantity	Integer	Yes	Number

- Invoice

#	PK	FK	Column Name	Data type	Mandatory	Description
1	x		id	Integer	Yes	ID

#			totalAmount	Integer	Yes	Total
2			totalAmount	Integer	Yes	Total
3		x	orderId	Integer	Yes	Order ID

- PaymentTransaction

#	PK	FK	Column Name	Data type	Mandatory	Description
1	x		id	Integer	Yes	ID
2			createdAt	DATETIME	Yes	Date of creation
3			content	VARCHAR(45)	Yes	Transacton content
4			method	VARCHAR(45)	Yes	Payment methods
5		x	cardId	Integer	Yes	ID of used card
6		x	invoiceId	Integer	Yes	Invoice ID

-- Table structure for table `book`

CREATE TABLE `book` (

 `id` int(11) NOT NULL,

 `author` varchar(45) NOT NULL,

 `coverType` varchar(45) NOT NULL,

 `publisher` varchar(45) NOT NULL,

 `publishDate` date NOT NULL

) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4;

-- ---

-- Table structure for table `card`

CREATE TABLE `card` (

 `id` int(11) NOT NULL,

 `cardCode` varchar(45) NOT NULL,

 `owner` varchar(45) NOT NULL,

 `cvvCode` varchar(3) NOT NULL,

```sql
  `dateExpired` varchar(4) NOT NULL
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4;
```

-- --

--
-- Table structure for table `cd`
--

```sql
CREATE TABLE `cd` (
  `id` int(11) NOT NULL,
  `artist` varchar(45) NOT NULL,
  `recordLabel` varchar(45) NOT NULL,
  `musicType` varchar(45) NOT NULL,
  `releasedDate` date DEFAULT NULL
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4;
```

-- --

--
-- Table structure for table `deliveryinfo`
--

```sql
CREATE TABLE `deliveryinfo` (
  `id` int(11) NOT NULL,
  `name` varchar(45) NOT NULL,
  `province` varchar(45) NOT NULL,
  `address` varchar(100) NOT NULL,
  `instructions` varchar(200) DEFAULT NULL
```

```
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4;


-- --------------------------------------------------------


--
-- Table structure for table `deliveryrushorderinfo`
--


CREATE TABLE `deliveryrushorderinfo` (
  `id` int(11) NOT NULL,
  `name` varchar(45) NOT NULL,
  `province` varchar(45) NOT NULL,
  `address` varchar(100) NOT NULL,
  `instructions` varchar(200) NOT NULL,
  `expectedTime` varchar(5) NOT NULL
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4;


-- --------------------------------------------------------


--
-- Table structure for table `dvd`
--


CREATE TABLE `dvd` (
  `id` int(11) NOT NULL,
  `discType` varchar(45) NOT NULL,
  `director` varchar(45) NOT NULL,
  `runtime` int(11) NOT NULL,
  `studio` varchar(45) NOT NULL,
```

```
  `subtitle` varchar(45) NOT NULL,

  `releasedDate` date NOT NULL,

  `filmType` varchar(45) NOT NULL
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4;
```

-- --

--
-- Table structure for table `invoice`
--

```
CREATE TABLE `invoice` (

  `id` int(11) NOT NULL,

  `totalAmount` int(11) NOT NULL,

  `orderId` int(11) NOT NULL
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4;
```

-- --

--
-- Table structure for table `media`
--

```
CREATE TABLE `media` (

  `id` int(11) NOT NULL,

  `category` varchar(45) NOT NULL,

  `price` int(11) NOT NULL,

  `quantity` int(11) NOT NULL,

  `title` varchar(45) NOT NULL,
```

```sql
  `value` int(11) NOT NULL,

  `imageUrl` varchar(45) NOT NULL,

  `rushOrderSupport` tinyint(1) NOT NULL

) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4;


--

-- Dumping data for table `media`

--

-- --------------------------------------------------------


--

-- Table structure for table `order`

--


CREATE TABLE `order` (

  `id` int(11) NOT NULL,

  `shippingFees` varchar(45) NOT NULL,

  `deliveryInfoId` int(11) NOT NULL

) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4;


-- --------------------------------------------------------


--

-- Table structure for table `ordermedia`

--


CREATE TABLE `ordermedia` (

  `mediaId` int(11) NOT NULL,

  `orderId` int(11) NOT NULL,
```

```
  `price` int(11) NOT NULL,

  `quantity` int(11) NOT NULL

) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4;



-- --------------------------------------------------------



--

-- Table structure for table `paymenttransaction`

--



CREATE TABLE `paymenttransaction` (

  `id` int(11) NOT NULL,

  `createdAt` date NOT NULL,

  `content` varchar(45) NOT NULL,

  `method` varchar(45) NOT NULL,

  `cardId` int(11) NOT NULL,

  `invoiceId` int(11) NOT NULL

) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4;



--

-- Indexes for dumped tables

--



--

-- Indexes for table `book`

--

ALTER TABLE `book`

  ADD PRIMARY KEY (`id`);
```

```sql
--
-- Indexes for table `card`
--
ALTER TABLE `card`
  ADD PRIMARY KEY (`id`);


--
-- Indexes for table `cd`
--
ALTER TABLE `cd`
  ADD PRIMARY KEY (`id`);


--
-- Indexes for table `deliveryinfo`
--
ALTER TABLE `deliveryinfo`
  ADD PRIMARY KEY (`id`);


--
-- Indexes for table `deliveryrushorderinfo`
--
ALTER TABLE `deliveryrushorderinfo`
  ADD PRIMARY KEY (`id`);


--
-- Indexes for table `dvd`
--
ALTER TABLE `dvd`
  ADD PRIMARY KEY (`id`);
```

```
--
-- Indexes for table `invoice`
--
ALTER TABLE `invoice`
  ADD PRIMARY KEY (`id`),
  ADD KEY `fk_Invoice_Order` (`orderId`);


--
-- Indexes for table `media`
--
ALTER TABLE `media`
  ADD PRIMARY KEY (`id`);


--
-- Indexes for table `order`
--
ALTER TABLE `order`
  ADD PRIMARY KEY (`id`),
  ADD KEY `fk_Order_DeliveryRushOrderInfo` (`deliveryInfoId`);


--
-- Indexes for table `ordermedia`
--
ALTER TABLE `ordermedia`
  ADD PRIMARY KEY (`orderId`,`mediaId`) USING BTREE,
  ADD KEY `fk_OrderMedia_Media` (`mediaId`);


--
```

```sql
-- Indexes for table `paymenttransaction`
--
ALTER TABLE `paymenttransaction`
  ADD PRIMARY KEY (`id`),
  ADD KEY `fk_PaymentTransaction_Card` (`cardId`),
  ADD KEY `fk_PaymentTransaction_Invoice` (`invoiceId`);


--
-- Constraints for dumped tables
--


--
-- Constraints for table `book`
--
ALTER TABLE `book`
  ADD CONSTRAINT `fk_Book_Media1` FOREIGN KEY (`id`) REFERENCES `media` (`id`);


--
-- Constraints for table `cd`
--
ALTER TABLE `cd`
  ADD CONSTRAINT `fk_CD_Media1` FOREIGN KEY (`id`) REFERENCES `media` (`id`);


--
-- Constraints for table `dvd`
--
ALTER TABLE `dvd`
  ADD CONSTRAINT `fk_DVD_Media1` FOREIGN KEY (`id`) REFERENCES `media` (`id`);
```

--
-- Constraints for table `invoice`
--

ALTER TABLE `invoice`

  ADD CONSTRAINT `fk_Invoice_Order` FOREIGN KEY (`orderId`) REFERENCES `order` (`id`);

--
-- Constraints for table `order`
--

ALTER TABLE `order`

  ADD CONSTRAINT `fk_Order_DeliveryInfo` FOREIGN KEY (`deliveryInfoId`) REFERENCES `deliveryinfo` (`id`),

  ADD CONSTRAINT `fk_Order_DeliveryRushOrderInfo` FOREIGN KEY (`deliveryInfoId`) REFERENCES `deliveryrushorderinfo` (`id`);

--
-- Constraints for table `ordermedia`
--

ALTER TABLE `ordermedia`

  ADD CONSTRAINT `fk_OrderMedia_Media` FOREIGN KEY (`mediaId`) REFERENCES `media` (`id`),

  ADD CONSTRAINT `fk_OrderMedia_Order` FOREIGN KEY (`orderId`) REFERENCES `order` (`id`);

--
-- Constraints for table `paymenttransaction`
--

ALTER TABLE `paymenttransaction`

  ADD CONSTRAINT `fk_PaymentTransaction_Card` FOREIGN KEY (`cardId`) REFERENCES `card` (`id`),

  ADD CONSTRAINT `fk_PaymentTransaction_Invoice` FOREIGN KEY (`invoiceId`) REFERENCES `invoice` (`id`);